LAWRENCE
LIVERMORE
NATIONAL
LABORATORY

LLNL-TR-413008

# CES COC NO. 16586: W305249

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May 14, 2009

## Disclaimer



This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

# CES Chain of Custody

**COC** Version 4.0 10/6/2004

**CES COC # 16586**

82378

Send Results to:
JODY DRAKE
L- 622 phone 30607
Copy: (please page for report pick-up)
L- _____ pgr: 02131

Turnaround Time
☐ E
☐ R
☒ N
DQO:
N/A

Field Contact JODY DRAKE
LLNL Account # 3293 - 59
Project Name N/A
Tank Volume N/A liters

Data Package Required: ☒ Normal ☐ CLP ☐ YMP
Reporting level: ☐ Level 1 ☐ Level 2 ☐ Level 3
☐ RETURN UNUSED SAMPLE TO CLIENT
☐ EDD Required *(data from off-site labs only)*
Client ID RHWM
**FOR CES USE ONLY**
Condition Upon Receipt: ☑ No Discrepancies
☐ Condition/Variance

| Client Sample Identification | Date Sampled | Time Sampled | Bldg | RAD (Y or N) | Matrix Code | Gen Code | # Bottles | Tests / Preservation Codes: FIELD GAMMA | | | | | | | | Additional Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | Sample Composition |
| W305249 1 | 12/1/06 | | 235 | Y | XX | WS | 1 | N | | | | | | | | IF NO ACTIVITY DETECTED |
| 2 | | | | | | | | | | | | | | | | ABOVE BACKGROUND, |
| 3 | | | | | | | | | | | | | | | | PLEASE CONTACT JODY |
| 4 | | | | | | | | | | | | | | | | DRAKE (X30607) FOR |
| 5 | | | | | | | | | | | | | | | | ISOTOPES TO REPORT MDA |
| 6 | | | | | | | | | | | | | | | | VALUES FOR. |
| 7 | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |

TREAT AS RAD

NO SCREEN REQ'D

| | Signature | Date | Time | Signature | Date | Time |
|---|---|---|---|---|---|---|
| Sampled and Relinquished by: | [signature] | 12/1/06 | 10:15 a.m. | Received by: [signature] | 12/1/06 | 10:15 |
| Relinquished by | | | | Received by: | | |
| Relinquished by | | | | Received by: | | |

CES phone # (925) 422-6605 or (925) 422-2060
See page 2 for codes and additional instructions.

ELAP Certifications #1554

| | CSF Version 1.0 12/21/98 | CES CASE SUMMARY FORM |
|---|---|---|

**Laboratory Identification:**
C&MS Environmental Services
Lawrence Livermore National Laboratory
7000 East Avenue, L-Code 231
Livermore CA 94550
(925) 424-4127
ELAP Certification No. 1554

*Packet Completion Date*

**December 13, 2006**

**Client:** **Jody Drake / RHWM**

**Sample Receipt:**

One (1) solid-material sample was submitted to CES on December 1, 2006 for field gamma analysis. The sample was counted in B235 Room 1136. Sample was intact and without any visible sign of tampering.

Project Name: **N/A**

Client COC Number **n/a** CES COC Number **16586**

| Client ID | CES ID | Requested Analyses |
|---|---|---|
| W305249 | 82378 | Field Gamma Scan |

**Case Narrative:**

Analyses were conducted using methodology as detailed in CES SOPs. Any technical or administrative problems encountered during analysis or other relevant comments are listed below:

**Additional Comments:**

**Field gamma scan is a non-Cal/EPA-certified test.**

*I certify that this data package is complete as per the customer's request and compliant with technical and administrative requirements. All analytical work performed by outside contract laboratories is reported on their letterhead and released by the associated laboratory, independent of CES. The Laboratory Director (or designee) as verified by the following signature authorizes release of this data package:*

Robert J. Haslett Jr., ext. 4-2088
Customer Representative

Date December 13, 2006

# *COC Sample ID Listing*

## *CES COC # 16586*

| CES Sample ID | Client Sample ID |
|---|---|
| **82378** | W305249 |

82378

# Field Gamma Analysis of W305249

**Report by:** David Wruck
**Date of Report:** December 4, 2006

## INTRODUCTION AND SAMPLE DESCRIPTION

This report documents the field gamma analysis of the following sample listed on CES Chain of Custody 16586. The sample is a 55-gallon TRU drum of lab trash.

| Client Sample ID | CES Sample ID |
|---|---|
| W305249 | 82378 |

## METHODS

***Method.*** CES SOP-HW-P556 "Field and Bulk Gamma Analysis"
***Detector.*** High-purity germanium, 35% relative efficiency, calibrated using a NIST-traceable sealed source and calibration verified using an independent sealed source.
***Count Time and Geometry.*** The sample was counted for 20 minutes at a distance of 24 inches from the detector. The drum was rotated 180 degrees halfway through the count. A tungsten collimator was used to reduce the amount of background radiation reaching the detector. A background spectrum was measured at the counting location.
***Date and Location of Scans.*** December 1, 2006 in Building 235 Room 1136
***Software and Spectral Analysis.*** Spectra were analyzed with ORTEC GammaVision software. Results were determined from the sample spectrum without background subtraction. Matrix and geometry corrections were calculated using ORTEC Isotopic software. The source was modeled as uniformly distributed inside the 55-gallon drum.

## RESULTS

Pu-239, Am-241 and Am-243 were detected.

| Nuclide | Activity (Ci) | Uncertainty (%) |
|---|---|---|
| Pu-239 | 1.8E-02 | 40 |
| Am-241 | 1.4E-03 | 40 |
| Am-243 | 5.0E-04 | 40 |